

FRANCE

By Harold R. Newman

France was a major European mineral producer, although traditional mineral industries have been in a state of transition during the past few years. In the past, the heavy economic and political involvement of the state was one of the main elements of the national mineral policy. The reduction of Government subsidies to support uneconomic mineral operations and the depletion of mineral reserves have had a significant impact on a number of extractive operations in the mineral industry.

Efforts have been made to promote the private sector and to reduce the dependence of state-owned companies on subsidies. The Government was proceeding with a program of privatization that required large state-controlled companies to reduce the direct role of the Government in the economy. International pressures of globalization and more-direct pressure from the European Union (EU) were behind the trend away from governmental involvement in industry.

Mineral and metal industries generally maintained production and other activities at about the same or slightly decreased rates as those of 1998. Several industries, such as bauxite, coal, iron ore, and uranium, have steadily undergone changes during the past few years, especially bauxite, which is no longer mined. Some bauxite waste dumps were reprocessed; the resulting product was used by cement companies.

The coal and iron ore industries, as well as other mineral producers, were affected by cheaper foreign sources, high operating costs, and the depletion of domestic resources. Coal mining was directed by Charbonnages de France (CdF), which was a state-owned company.

The uranium industry reduced its operations by closing a number of mines and processing plants because of low market prices and depletion of certain deposits. Some factors in the drop of uranium demand were the reduced cost for petroleum and the increased accessibility of natural gas from the North Sea and the former Soviet Union (table 1).

Table 2 lists the relation of selected classes of mineral commodities on France's balance of payments position in relation to the EU and the world in 1998 (the latest year for which data are available).

France had the world's fifth largest industrial market. Tables 3 and 4 list exports, as well as reexports, and imports of selected mineral commodities by France in 1998 (the latest year for which data are available), respectively.

France has a tradition of highly centralized administrative oversight of its essentially market-based economy. The Government maintained efforts to focus the country's trading patterns toward the Organization for Economic Cooperation and Development countries while encouraging the development of new markets, particularly in Asia and Latin America. Strong commercial relations continued between France and the United States, and Germany remained France's largest export

destination. In 1999, France was the eighth largest trading partner of the United States worldwide and the third largest trading partner in Europe after the United Kingdom and Germany (U.S. Bureau of Economic and Business Affairs, 2000). France adopted the euro currency as of January 1, 1999. Responsibility for the exchange rate was shared between the national finance ministry and the European Central Bank.

Government and private companies produced minerals and mineral products, conducted research, and explored for new domestic and international mineral resources (table 5).

The proposed merger of Alcan Aluminum Ltd. of Canada, Pechiney Group of France, and Alusuisse Lonza Group of Switzerland to form the world's largest aluminum company was expected to be examined by antitrust officials in Canada, the EU, France, Switzerland, and, possibly, the United States. This was the biggest consolidation move in the international aluminum industry. The merger would create such a commanding position in the European rolled products market that EU competition legislation could be an obstacle. The new company would produce about 15% of the world's primary aluminum and be the world's largest aluminum rolling company. Also, the company would have 11 bauxite mines, 10 alumina refineries, and 27 smelters. The merger would place the new group in a balanced global position (Metal Bulletin, 1999d).

LaSource Compagnie Minière, which was the Franco-Australian partnership company, was formally dissolved after nearly 4 years. Bureau de Recherches Géologiques et Minières (BRGM) sold its 35% interest in LaSource to Normandy Mining Ltd. of Australia, which owned the balance, for about \$22 million. The termination was finalized in mid-1999. LaSource was formed to use BRGM's experience in exploration for mineral resources and Normandy's experience in the development of mineral resources. Normandy was proceeding with exploration and development of the Chessy copper deposit near Lyon (Metal Bulletin, 1999c).

Gold mining in France was mostly concentrated in Société des Mines du Bourneix's open pit and underground operations south of Limoges in the Saint Yrieix la Perche District and Mines d'Or de Salsigne's underground Salsigne Mine near Carcassonne. The Salsigne Mine was in receivership and operating under the protection of the French courts. The mine has been in liquidation since 1991 and has scarcely managed to meet operating costs each year. Under a new plan, underground mining would be suspended in favor of open pit mining for an unspecified period of time (Metal Bulletin, 1999b).

The iron ore basin of northern France stretches from Lorraine northward into Belgium. The high phosphorus and low iron content of the ore limited its desirability, and production has been declining for several years. Terres Rouges Mine, which

was the last iron ore mine in the Lorraine district, was closed at the end of 1998. The mines of Lorraine once produced more than 50 million tons per year (Mt/yr) of iron ore.

The Usinor Group produced about 20 million metric tons (Mt) of crude steel in 1999 and ranked third in the world as a producer of steel in terms of crude steel production and second in terms of sales from steelmaking activities after Nippon Steel Corp. of Japan. Usinor's principal activities were divided into flat carbon steels, stainless steels and alloy, and specialty steels (Usinor, July 1, 1999, Usinor at a glance, accessed December 18, 2000, at URL http://www.usinor.com/ENGLISH/groupe/group_11.htm).

Usinor became the majority shareholder in Cockerill Sambre, which was a Belgian steel producer, after approval of the European Commission. Usinor purchased 53.77% of the capital of Cockerill Sambre for about \$650 million. The deal included Eko Stahl AG, which was Cockerill Sambre's German subsidiary, and created Europe's largest steelmaker with a crude steel capacity of more than 27 Mt/yr. As part of the deal, Usinor agreed to divest itself of some of its profiling and flat steel distribution in France to satisfy the Commission's doubts about competition on the French market for both products (Metal Bulletin, 1999a).

Mining of lead and zinc has completely ceased in France. In 1999, two companies operated primary zinc plants using imported ores and concentrates. Société des Mines et Fonderies de Zinc de la Vieille Montagne of Belgium operated a zinc refinery at Auby-les-Douai with a capacity of 210,000 metric tons per year (t/yr) of zinc. Métaleurop Nord S.A. operated a 110,000-t/yr primary smelter and a 40,000-t/yr secondary smelter at Noyelles-Godualt.

Compagnie Générale des Matières Nucléaires, which was the state-owned uranium mining company, was the major producer of uranium. France was the world's largest per capita nuclear power generator and ranked second in total installed nuclear capacity after the United States. About 80% of electricity generated in France came from 57 nuclear plants. This has changed dramatically since 1973 when fossil fuels accounted for more than 80% of power generation (U.S. Energy Information Administration, November 1999, France—Country analysis brief, accessed November 3, 1999, at URL <http://www.eia.doe.gov/emeu/cabs/france.html>).

Denain-Anzin Minéraux Refractaire Ceramique, which was a subsidiary of the Imetal Group, was the only producer of andalusite in Europe. Its mining operation was at Glomel, Brittany, and produced about 70,000 t/yr.

The primary barite mining area is at Chaillac near Limoges. Barytine de Chaillac, which was a subsidiary of Solvay Barium Strontium GmbH of Germany, was the major producer with an open pit mine and plant at Chaillac. Barytine produced about 70,000 t/yr of flotation-grade barite, averaging 98% barium sulfate, suitable for chemicals production.

Lafarge SA and Société des Ciments Français were the two largest producers of cement in France. Each company had control of approximately one-third of the domestic market. Lafarge was the world's second largest producer of cement after Holderbank Financière Glaris Ltd. of Switzerland, with 100 plants in 32 countries (Lafarge, [undated], Cement, accessed December 19, 2000, at URL <http://www.lafarge.com/domino/>

[html...sf?html/Ciment_homeus?opendocument](http://www.lafarge.com/domino/)).

Société Générale de Recherches et d'Exploitation Minières (SOGEREM), which was the main producer of fluorspar with three open pit mines in the south of France, accounted for more than 60% of fluorspar production. The fluorspar vein deposits are found in the axial zone of the Pyrénées, the Massif Central, the Hercynian massifs, the outer Alps, and the Vosges. SOGEREM's mining operations supplied Comifluor S.A., which operated a plant at Bastide-a-Olette. This plant produced acid-grade fluorspar, 97% calcium fluoride, and electrical-grade fluorspar. The Escardo Mine, which was owned by Denain-Anzin Minéraux S.A., also shipped crude ore from its surface mining operation to the Olette plant for processing (Marketing Department, 1998).

France was one of Europe's largest producers of gypsum. Two-thirds of the production was from the Paris Basin. Four companies produced about 95% of the output. S.A. de Matériel de Construction was the largest company.

Kaolin deposits in the granite massifs in Brittany were the ones most actively mined in France. The largest mine, which was operated by La Source Compagnie Minière, was in the Kaolin d'Arvor deposit near Quessoy. The mine had a capacity of 300,000 t/yr. The second largest operation was Société Minière des Kaolin Du Moribihan's (SMKDM) open pit mines at Lanvrian and Kerbriant with capacities of 80,000 t/yr of kaolin and 10,000 t/yr of mica. The third largest operation was Société des Kaolins du Finistère's (SKF) 30,000-t/yr-capacity operation at Berrien. Groupe Mineral Harwanne owned SKF and SMKDM (Marketing Department, 1998). The kaolin was used mostly in the paper and the ceramic industries. Ball and refractory clays were mined in the Charante Basin to the southwest, which has produced more than 1 Mt.

Mines de Potasse d'Alsace S.A. was the principal producer of potash with two underground mines, Marie-Louise and Amélie, located near Mulhouse, Alsace. It was a significant supplier of potash salts. The main products were potash ore, which was concentrated to 62% potassium oxide material, bromine, rock salt for snow clearing, and other industrial products (Guide des Mines et Carriers, 2000).

Talc de Luzenac S.A. was significant not only to the domestic market, but also to the European market. Borax Français S.A., which was a subsidiary of Rio Tinto Corp., purchased 92% of Talc de Luzenac. As a result of mergers and acquisitions during the past 6 years, Luzenac was formed as a subsidiary of Rio Tinto. Luzenac operated 16 deposits and 20 processing plants in Europe and North America and was the leading talc producer in the world (Guides des Mines et Carriers, 2000).

In 1999, all underground coal mines were closed in the Midi-Pyrénées region and in the Nord Pas-de-Calais Basin. CdF was proceeding with further rationalizations that would result in reduced production. The rest of the mines, except in Lorraine region, would be closed by yearend 2000. The three deep mines still active in Lorraine, Reumaux, La Houve, and Vouters, were expected to close after 2000. Four open pit mines in the Centre-Midi Basin were still being worked mostly for lignite. CdF envisioned the final stoppage of all coal mining in France by 2005 (Mining Magazine, 1999).

In 1999, onshore petroleum production was mainly from the

Aquitaine and the Paris Basins. Because production had started to decline in these areas, the Government initiated a program to encourage exploration for new deposits in other areas thought to have potential; the Jura Basin was one area under consideration.

Elf Aquitaine SA was to sell its major North Sea interests. The Claymore, the Piper, and the Saltire platforms were involved, as was the Flotta Terminal on Orkney Island, Scotland. The sale would include the Piper B platform, which was the replacement for Occidental Co.'s Piper Alpha installation that blew up in 1988 with the loss of 167 lives. The move by Elf would allow it to concentrate on the Elgin and the Franklin fields, which were expected to begin production in April 2000 (Anderson's Oil and Gas Connections, June 11, 1999, Elf Aquitaine to sell north Sea interests, accessed June 11, 1999, at URL <http://www.gasandoil.com/goc/company/cne92428.htm>).

Elf and TotalFina SA, which were France's largest and second largest petroleum companies, respectively, ended a takeover battle by agreeing to a \$54 billion merger offer by TotalFina that would create the world's fourth largest oil company. Elf and TotalFina had been under pressure to increase in size amid rapid industry wide consolidation. Three of the four "supermajor" oil companies, BP Amoco Plc., Royal Dutch Shell AG, and Total/Elf, were based in Europe, and one, Exxon Corp., was based in the United States. The deal capped a period of rapid growth by TotalFina, which had acquired Petrofina SA of Belgium in 1998. It also marked a shift of center of the oil industry from the United States to Europe (Hamilton, 1999).

Companies that operated refineries in France included BP Amoco, Mobil Corp., Royal Dutch Shell, and Total/Elf, as well as other smaller companies. The structure of the industry was geared to gasoline production. Refining was mainly focused on the high-octane unleaded gasoline used by a majority of the vehicles in France.

Because refining units have been capable of processing heavy fuels and no hydrocracked feedstocks were available for the production of gas oil, the process stream was short on middle distillates and naphtha. France was a net importer of petroleum products.

Having one of the world's most developed economies, France was an advocate for the EU and the European single-market concept. The country has had to make considerable changes in the structure of its industries, particularly those mineral industries controlled by the state. Several state-owned companies have taken the initiative to become leaders in their respective industries. Others have been forced to make additional adjustments under rationalization schemes proposed by the EU or the French Government. The depletion of natural resources and/or the cessation of subsidies for uneconomic operations have had impacts on local communities and their economies. France will have the advantage of plentiful electrical power to attract industrial facilities requiring skilled work forces and will have good access to markets in Europe.

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Major Sources of Information

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TABLE 1
FRANCE: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/ METALS	1995	1996	1997	1998	1999 e/
Aluminum:					
Bauxite, gross weight 4/ thousand tons	75	81	164	165 e/	160
Alumina:					
Crude do.	519	550	570	570 e/	550
Calcined do.	425	440	450	450 e/	450
Metal:					
Primary do.	372	386	399	424	455 5/
Secondary do.	231	236	242	240 e/	239 5/
Antimony metal, including regulus	680	520	650	600 e/	500
Cadmium metal	--	92 r/	309	177 r/	195 5/
Cobalt metal:					
Powder	330	580	670	600 e/	600
Chloride	161	174	159	172 e/	170
Copper:					
Mine output, Cu content	172	170	196	180 e/	100
Metal:					
Blister, secondary e/	2,580	2,300	1,490	2,000	1,500
Refined:					
Primary	4,200	10,500	5,800 e/	-- r/	--
Secondary e/	38,240	28,600	29,800	22,400 r/	1,800
Total	42,440	39,100	35,600	22,400 r/ e/	1,800
Gold, mine output, Au content kilograms	4,615	5,651	4,953 r/	3,793 r/	3,600
Iron and steel:					
Iron ore and concentrates:					
Gross weight thousand tons	1,496	1,464	523	100 r/	--
Fe content do.	432	430	145 e/	28 r/	--
Metal:					
Pig iron do.	12,860	12,108	13,424	13,603	13,854 5/
Ferrous alloys:					
Blast furnace, spiegeleisen and ferromanganese	304	281	326	321 e/	302 5/
Electric furnace:					
Ferromanganese e/ thousand tons	85 5/	100	100	100	100
Ferrosilicon do.	108	103	109	110 e/	100
Silicon metal do.	71	74	66	65 e/	65
Other (Si, Ca, Mg) do.	124	114	94	95 e/	100
Total do.	692	672	695	691 e/	667
Steel ingots and castings do.	18,096	17,630	19,773	20,241	20,211 5/
Semimanufactures do.	16,164	16,224	17,975	16,822	16,500
Lead:					
Smelter, secondary e/	247,700	241,100	218,500	200,000	223,000 5/
Refined:					
Primary	128,708	140,750	137,500	146,000 e/	124,000
Secondary	168,000 e/	162,000	164,800	172,000	155,000
Total	296,708 e/	302,750	302,300	318,000	279,000
Magnesium metal, including secondary	14,450	14,000	13,740	14,700 r/	14,000
Nickel metal 6/	9,106	9,070	8,750	9,778	9,500
Silver: e/					
Mine output, Ag content: kilograms	1,167 5/	1,550	1,770	2,000	1,000
Metal, Ag content of final smelter products do.	666	650	535	550	500
Tin, secondary	3,020	4,410	3,810	3,000 e/	2,500
Tungsten, powder	600	670	680	600 e/	500
Uranium:					
Mine output, U content	857	841	579	500 e/	500
Chemical concentrate, U ₃ O ₈ equivalent	728	713	487	475 e/	475
Zinc, metal including secondary, slab	300,400	324,300	317,151	329,019	331,103 5/
Zirconium, sponge	1,500	1,550	1,870	1,800 e/	1,600
INDUSTRIAL MINERALS					
Barite, BaSO ₃ equivalent	75,450	76,000	77,000	76,000 e/	75,000
Bromine, elemental e/	2,260	2,020	1,980	2,000	1,950
Cement, hydraulic thousand tons	19,692	18,340	19,780	19,000 e/	18,750

See footnotes at end of table.

TABLE 1--Continued
FRANCE: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1995	1996	1997	1998	1999 e/
INDUSTRIAL MINERALS--Continued					
Clays:					
Kaolin and kaolinitic clay (marketable) thousand tons	345	326	332	300 e/	300
Refractory clay, unspecified do.	15	14	13	14 e/	14
Diamonds, synthetic, industrial e/ thousand carats	3,800	3,500	3,600	3,600	3,600
Diatomite e/ thousand tons	80	80	80	80	75
Feldspar, crude e/ do.	632	546	621	600	600
Fluorspar:					
Crude do.	352	295	236	250 e/	250
Marketable:					
Acid and ceramic-grade do.	102	78	84	80 e/	80
Metallurgical-grade do.	28	33	22	30 e/	20
Total do.	130	111	106	110 e/	100
Gypsum and anhydrite, crude do.	4,800	4,550	4,500	4,500 e/	4,500
Kyanite, andalusite, related materials e/ do.	80	70	67	70	70
Lime, quick and hydrated, dead-burned dolomite e/ do.	2,940	2,714	2,360	2,400	2,500
Mica e/	10,000	10,000	8,000	10,000	10,000
Nitrogen, N content of ammonia thousand tons	1,470	1,850	1,757	1,570 e/	1,500
Pigments, mineral, natural, iron oxide e/	1,000	1,000	2,200	2,000	1,500
Phosphates, Thomas slag thousand tons	140	77	44	50 e/	50
Potash:					
K ₂ O equivalent (run-of-mine) e/ do.	869	812	780	600	400
K ₂ O equivalent (marketable) do.	799	760	725	417	311 5/
Pozzolan and lapilli e/ do.	427	400	477	460	450
Salt:					
Rock salt e/ do.	165	160	371	300	100
Brine salt (refined) do.	1,491	1,460	1,475	1,500 e/	1,000
Marine salt do.	1,473	970	1,188	1,200 e/	900
Salt in solution do.	4,410	4,273	4,051	4,000 e/	4,000
Total do.	7,539	6,863	7,085	7,000 e/	6,000
Sodium compounds: e/					
Soda ash do.	1,120	1,106	1,053	1,000	1,000
Sodium sulfate do.	117	124	120	120	120
Stone, sand, and gravel: e/					
Limestone, agricultural and industrial do.	9,780	9,200	11,433 5/	11,000	11,000
Slate, roof do.	27	26	31	30	30
Sand and gravel:					
Industrial sands do.	6,100	6,550	6,560	6,500	6,500
Other sand, gravel, and aggregates do.	175,000	159,000	164,000	165,000	165,000
Sulfur, byproduct:					
Of natural gas do.	825	755	697	600	400
Of petroleum do.	240	235	263	245	250
Of unspecified sources do.	106	99	236	261	170
Total e/ do.	1,170	1,090	1,200	1,100	820
Talc:					
Crude	322,300	349,270	362,000	360,000 e/	370,000
Powder e/	297,300	320,970	300,000	300,000	300,000
MINERAL FUELS AND RELATED MATERIALS					
Asphaltic material e/	32,300	28,500	23,000	24,000	24,000
Carbon black e/	259,000	247,000	253,000	250,000	250,000
Coal, including briquets:					
Anthracite and bituminous thousand tons	7,014	7,312	5,779	5,300	5,000
Lignite do.	1,402	939	690	800	700
Total do.	8,416	8,251	6,469	6,100	5,700
Briquets do.	276	256	250 e/	250 e/	250
Coke, metallurgical do.	5,447	3,850	3,900 e/	4,000 e/	3,800
Gas, natural, marketed million cubic meters	2,830	2,815	2,800 e/	2,600 e/	2,500
Petroleum:					
Crude thousand 42-gallon barrels	18,284	15,339	13,104	13,000 e/	12,000
Refinery products: e/					
Liquefied petroleum gas do.	30,000	32,155 5/	34,324 5/	34,000	34,000
Gasoline, all kinds do.	148,000	141,524 5/	145,954 5/	145,000	145,000
Jet fuel do.	45,000	45,000	53,656 5/	54,000	54,000

See footnotes at end of table.

TABLE 1--Continued
FRANCE: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1995	1996	1997	1998	1999 e/	
MINERAL FUELS AND RELATED MATERIALS--Continued						
Petroleum--Continued:						
Kerosene	thousand 42-gallon barrels	500	500	700	700	500
Distillate fuel oil	do.	200,000	200,000	260,000	260,000	200,000
Residual fuel oil	do.	78,000	78,000	70,000	76,000	76,000
Refinery fuel and losses	do.	20,000	20,000	40,000	20,000	20,000
Other products	do.	40,000	40,000	125,000	100,000	40,000
Total	do.	562,000	557,000	730,000	690,000	570,000

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through September 2000.

2/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.

3/ In addition to the commodities listed, France also produces germanium from domestic ores and has been described as the world's leading producer of this commodity. Unfortunately, actual output is not regularly reported. In addition France produces large amounts of stone, but statistics on output are not available.

4/ Reprocessed bauxite, not for metallurgical use.

5/ Reported figure.

6/ Excludes secondary production from nickel/cadmium batteries.

TABLE 2
FRANCE: 1998 BALANCE OF PAYMENTS, SELECTED MINERAL COMMODITIES

(Thousand dollars)

Mineral commodity	Exports to EU	Imports from EU	Net gain or (loss)	Exports to the world	Imports from the world	Net gain or (loss)
Crude industrial minerals:						
Cement, hydraulic	57,777	99,499	(41,722)	113,204	154,770	(41,566)
Feldspar	7,315	4,640	2,675	13,510	6,250	7,260
Granite, sandstone etc.	22,939	40,251	(17,312)	29,328	79,940	(50,612)
Limestone, for lime, cement	1,763	1,689	74	2,711	1,690	1,021
Steatite, natural talc	38,874	13,247	25,627	44,844	14,384	30,460
Other	415,005	375,001	40,004	526,169	559,238	(33,069)
Total	543,673	534,327	9,346	729,766	816,272	(86,506)
Metalliferous ores:						
Chromium	579	1,886	(1,307)	622	4,245	(3,623)
Copper	62	22	40	69	99	(30)
Molybdenum	21	7,382	(7,361)	24	12,257	(12,233)
Zinc	4,157	90,448	(86,291)	4,157	157,360	(153,203)
Other (including waste and scrap)	61,774	183,646	(121,872)	83,109	959,095	(875,986)
Total	66,593	283,384	(216,791)	87,981	1,133,056	(1,045,075)
Metals:						
Aluminium	1,513,722	1,688,037	(174,315)	2,015,011	2,588,268	(573,257)
Iron and steel 1/	9,782,102	10,657,296	(875,194)	13,509,748	12,561,413	948,335
Lead	55,942	53,816	2,126	64,019	57,220	6,799
Mercury	31	201	(170)	177	278	(101)
Other nonferrous metals	1,884,857	1,830,662	54,195	2,373,656	3,487,336	(1,113,680)
Total	13,236,654	14,230,012	(993,358)	17,962,611	18,694,515	(731,904)
Mineral fuels	3,780,641	4,180,016	(399,375)	6,371,747	16,802,224	(10,430,477)

1/ Includes ferroalloys and silicon metal.

Source: United Nations Statistical Office (microfiche).

TABLE 3
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
METALS			
Alkali metals	51	--	Poland 31; Spain 13; Germany 4.
Aluminum:			
Ore and concentrate	29,577	--	Morocco 16,134; United Kingdom 9,903; Switzerland 2,040.
Oxides and hydroxides	189,640	9,030	Italy 74,317; Germany 23,786; Spain 23,508.
Ash and residue	52,028	--	Norway 16,259; Belgium-Luxembourg 15,472; Spain 11,263.
Metal including alloys:			
Scrap	165,770	7,887	Italy 48,015; Spain 39,986; Germany 24,388.
Unwrought	178,674	108	Italy 41,084; Germany 39,754; Belgium-Luxembourg 22,925.
Semimanufactures	470,753	15,034	Germany 93,950; United Kingdom 65,102; Italy 48,673.
Antimony:			
Oxides	5,292	170	Italy 1,793; Germany 1,205; United Kingdom 781.
Metal including alloys, all forms	139	1	Netherlands 81; Belgium-Luxembourg 49; Poland 5.
Arsenic, metal including alloys, all forms	9	--	Cameroon 5; Germany 1; Morocco 1.
Beryllium, metal including alloys, all forms	9	5	Sweden 2; Belgium-Luxembourg 1.
Bismuth, metal including alloys, all forms	44	--	Belgium-Luxembourg 16; Germany 15; Switzerland 3.
Cadmium, metal including alloys, all forms	1,155	--	Belgium-Luxembourg 1,024; Germany 46; India 40.
Chromium:			
Ore and concentrate	2,470	--	Italy 1,898; Spain 314; Belgium-Luxembourg 97.
Oxides and hydroxides	247	2	Belgium-Luxembourg 154; Germany 20; Poland 20.
Metal including alloys, all forms	4,785	2,135	United Kingdom 696; Japan 579.
Cobalt:			
Ore and concentrate	1,598	--	Mainly to Morocco.
Oxides and hydroxides	76	30	Italy 20; Netherlands 8; Belgium-Luxembourg 4.
Metal including alloys, all forms	786	92	Morocco 299; Italy 80; United Kingdom 69.
Copper:			
Ore and concentrate	229	1	Germany 222; Belgium-Luxembourg 5.
Matte and speiss including cement copper	1,024	--	Spain 946; Italy 27; Belgium-Luxembourg 24.
Oxides and hydroxides	355	203	Australia 40; Croatia 34; Italy 21.
Sulfate	6,909	--	Germany 1,396; Spain 947; Nigeria 875.
Ash and residue	11,773	--	Belgium-Luxembourg 6,989; Spain 2,154; Germany 2,012.
Metal including alloys:			
Scrap	122,329	261	Italy 30,780; Germany 30,481; Netherlands 30,115.
Unwrought	51,200	55	Spain 18,582; Germany 15,624; Italy 6,688.
Semimanufactures	484,598	14,606	Germany 123,568; Italy 108,801; Spain 52,761.
Germanium, metal including alloys, all forms	value, thousands	\$189	\$16 Spain \$110; Italy \$23; Mexico \$11.
Gold:			
Waste and sweepings	do.	\$11,966	\$381 Switzerland \$7,965; Belgium-Luxembourg \$1,792; United Kingdom \$1,266.
Metal including alloys, unwrought and partly wrought	do.	\$186,671	\$1,624 United Kingdom \$78,362; Italy \$36,915; Switzerland \$27,100.
Iron and steel:			
Ore and concentrate:			
Including roasted pyrite	105,947	--	Italy 75,114; Germany 20,127; Belgium-Luxembourg 6,636.
Pyrite, roasted	994	--	Ghana 993; United Kingdom 1.
Metal:			
Scrap	thousand tons	3,455	2 Spain 1,237; Belgium-Luxembourg 995; Italy 911.
Pig iron, cast iron, related materials		13,377	(1) Germany 4,667; Spain 3,567; Canada 1,323.
Ferroalloys:			
Ferromanganese	456	--	Spain 173; Germany 118; Belgium-Luxembourg 115.
Ferromolybdenum	46,927	1,860	Germany 17,325; Norway 14,136; Spain 2,831.
Ferrosilicon	92	--	Germany 34; Belgium-Luxembourg 26; Spain 22.
Ferrosilicium	14,257	--	Italy 13,542; Belgium-Luxembourg 706; Switzerland 7.
Ferrosilicobismuth	704	348	Belgium-Luxembourg 244; Germany 71; Finland 26.
Ferrosilicochromium	2	--	Germany 1; Nigeria 1.
Ferrosilicomanganese	56,855	19,541	Germany 11,239; Belgium-Luxembourg 10,266; Italy 7,487.
Ferrosilicon	41,049	2,312	Germany 15,287; Italy 13,242; Spain 4,985.
Ferrotitanium and ferrosilicotitanium	1,535	32	Italy 363; Germany 286; Finland 201.
Ferrotungsten and ferrosilicotungsten	16	--	Spain 11; Belgium-Luxembourg 4; Germany 1.
Ferrovandium	18	4	Spain 6; Germany 2; United Kingdom 2.
Unspecified	40,965	5,194	Germany 9,589; Spain 4,861; Italy 3,736.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Destinations		
		United States	Other (principal)	
METALS--Continued				
Iron and steel--Continued:				
Metal--Continued:				
Steel, primary forms	thousand tons	1,804	63	Belgium-Luxembourg 774; Spain 288; Morocco 203.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	do.	3,956	451	Italy 1,338; Spain 809; Germany 598.
Clad, plated, coated	do.	2,235	19	Germany 570; Italy 331; Spain 301.
Of alloy steel	do.	2,197	210	Germany 469; Italy 425; Spain 393.
Bars, rods, angles, shapes, sections	do.	2,870	116	Germany 1,009; Belgium-Luxembourg 465; Italy 328.
Rails and accessories		18,510	71	Spain 5,717; Belgium-Luxembourg 2,522; Israel 1,365.
Wire		232,484	45,818	Germany 58,305; Italy 20,120; Spain 18,140.
Tubes, pipes, fittings	thousand tons	1,401	65	Germany 230; United Kingdom 118; Sudan 98.
Lead:				
Ore and concentrate		3,160	--	Germany 3,105; Spain 49; Vietnam 4.
Oxides		15,719	--	Germany 9,997; Belgium-Luxembourg 2,505; Japan 1,111.
Ash and residue		1,055	--	All to Belgium-Luxembourg.
Metal including alloys:				
Scrap		3,026	--	Belgium-Luxembourg 1,300; Switzerland 839; Ireland 632.
Unwrought		89,512	--	Germany 22,912; Italy 21,685; Spain 20,748.
Semimanufactures		6,091	--	Germany 85; Netherlands 42; unspecified 5,751.
Lithium oxides and hydroxides		284	170	Belgium-Luxembourg 70; Turkey 40; Germany 2.
Magnesium, metal including alloys:				
Scrap		1,835	--	Norway 1,661; Netherlands 50; Switzerland 45.
Semimanufactures		24	3	Germany 16; Tunisia 4; United Kingdom 1.
Manganese:				
Ore and concentrate		116,557	--	Norway 93,018; Belgium-Luxembourg 9,994; Italy 5,390.
Oxides		292	22	Netherlands 162; Switzerland 39; Portugal 21.
Metal including alloys, all forms		611	11	Germany 420; Belgium-Luxembourg 77; Poland 45.
Mercury		39	--	Colombia 17; Belgium-Luxembourg 6; South Africa 6.
Molybdenum:				
Ore and concentrate:				
Roasted	value, thousands	\$7	--	United Kingdom \$6; Spain \$1.
Unroasted	do.	\$18	--	Belgium-Luxembourg \$11; China \$4; Italy \$3.
Oxides and hydroxides		4	--	Belgium-Luxembourg 2; Italy 1; Spain 1.
Metal including alloys:				
Unwrought		2	(1/)	Malaysia 1; Spain 1.
Semimanufactures		62	1	Austria 47; China 10; Italy 1.
Nickel:				
Ore and concentrate		7	--	Belgium-Luxembourg 4; Cote d' Ivoire 2.
Matte and speiss		17	--	Finland 7; Cote d' Ivoire 2; Netherlands 2.
Oxides and hydroxides		4	--	Belgium-Luxembourg 2; Egypt 2.
Metal including alloys:				
Scrap		10,420	791	Italy 3,993; Spain 3,406; Germany 1,220.
Unwrought		8,055	1,990	Germany 2,369; Sweden 586; unspecified Asia 748.
Semimanufactures		19,781	1,947	Germany 5,968; Italy 4,659; Spain 3,526.
Platinum-group metals:				
Waste and sweepings	value, thousands	\$28,303	\$240	United Kingdom \$26,906; Norway \$963; Switzerland \$111.
Metal including alloys, unwrought and partly wrought:				
Palladium	do.	\$47,963	\$58	Germany \$15,790; Austria \$10,724; Switzerland \$7,477.
Platinum	do.	\$56,726	\$1,470	United Kingdom \$21,489; Germany \$12,411; Spain \$7,830.
Rhodium	do.	\$79,325	\$27,592	United Kingdom \$44,116; Italy \$4,658; Germany \$2,088.
Iridium, osmium, ruthenium	do.	\$1,290	\$624	United Kingdom \$504; Spain \$76; Italy \$43.
Rare-earth, metals including alloys, all forms		201	23	Germany 169; Belgium-Luxembourg 3; Brazil 2.
Selenium, elemental		73	6	Canada 38; Spain 12; Germany 7.
Silicon, high-purity		30	3	Netherlands 10; Italy 8; Japan 7.
Silver:				
Ore and concentrate	value, thousands	\$24	--	Spain \$23; Italy \$1.
Metal including alloys, unwrought and partly wrought	do.	\$135,975	\$42	Germany \$32,667; Spain \$28,084; United Kingdom \$25,747.
Tantalum, metal including alloys, all forms		7	1	Germany 2; Belgium-Luxembourg 1; Italy 1.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
METALS--Continued			
Tin, metal including alloys:			
Scrap	3,165	(1/)	Spain 1,685; Belgium-Luxembourg 1,455; Italy 23.
Unwrought	884	(1/)	Spain 463; Germany 149; United Kingdom 80.
Semimanufactures	2,070	115	Italy 752; Germany 477; Spain 237.
Titanium:			
Ore and concentrate	868	--	Cameroon 800; Italy 30; Belgium-Luxembourg 19.
Oxides	23,792	9,565	Germany 3,149; Netherlands 2,164; Italy 1,704.
Metal including alloys, all forms	4,517	1,358	Germany 471; Belgium-Luxembourg 236; Italy 138.
Tungsten:			
Ore and concentrate	value, thousands	\$7	-- Morocco \$6; Belgium-Luxembourg \$1.
Metal including alloys:			
Unwrought		236	1 Germany 55; Switzerland 48; Austria 46.
Semimanufactures	value, thousands	\$5,178	\$372 Belgium-Luxembourg \$2,149; United Kingdom \$727; Germany \$671.
Uranium and thorium:			
Ore and concentrate	do.	\$2	-- All to Niger.
Oxides and other compounds	do.	\$772,689	\$135,966 Belgium-Luxembourg \$400,135; United Kingdom \$79,115; Japan \$72,730.
Metal including all forms:			
Uranium	do.	\$43,793	-- Japan \$40,875; Sweden \$2,647; Belgium-Luxembourg \$264.
Thorium	do.	\$2,201	-- Russia \$1,299; Belgium-Luxembourg \$515; Sweden \$278.
Vanadium:			
Oxides and hydroxides		86	14 Netherlands 47; Austria 18; Italy 6.
Metal including alloys, all forms		2	-- All to Italy.
Zinc:			
Ore and concentrate		19,655	-- Belgium-Luxembourg 17,072; Netherlands 1,781; Spain 789.
Oxides		24,036	-- Spain 10,858; Belgium-Luxembourg 4,038; Italy 3,433.
Blue powder		1,224	-- Netherlands 1,054; Belgium-Luxembourg 108; Spain 39.
Ash and residue		17,771	-- Netherlands 5,623; Italy 4,240; Belgium-Luxembourg 3,260.
Metal including alloys:			
Scrap		37,893	94 Belgium-Luxembourg 12,443; Italy 9,350; India 3,336.
Unwrought		159,059	1,204 Belgium-Luxembourg 94,951; Germany 24,476; Italy 13,356.
Semimanufactures		2,629	-- Germany 924; Belgium-Luxembourg 650; Brazil 400.
Zirconium, ore and concentrate		478	16 Spain 125; Italy 115; Belgium-Luxembourg 75.
Other:			
Ores and concentrates		4	-- All to Madagascar.
Oxides and hydroxides		3,438	8 Germany 2,436; Japan 447; Belgium-Luxembourg 177.
Ashes and residues		32,290	76 Belgium-Luxembourg 17,661; Germany 6,564; Italy 3,916.
Base metals including alloys, all forms		662	30 Italy 523; Japan 52; United Kingdom 17.
Metalloids		13	2 Germany 5; Senegal 5.
Precious metals, n.e.s.:			
Ores and concentrates	kilograms	11,000	-- Germany 10,800; Switzerland 200.
Waste and scrap	value, thousands	\$44,112	\$940 United Kingdom \$21,605; Switzerland \$11,268; Spain \$4,221.
INDUSTRIAL MINERALS			
Abrasives, n.e.s.:			
Natural, corundum, emery, pumice, etc.		2,411	1 Germany 812; Czech Republic 438; Belgium-Luxembourg 367.
Artificial:			
Corundum		35,584	3,440 Germany 8,446; Spain 6,729; Italy 4,422.
Silicon carbide		862	-- Italy 495; Spain 219; Austria 52.
Dust and powder of precious and semiprecious stones including diamonds	value, thousands	\$388	\$204 Italy \$68; Iran \$44; Portugal \$19.
Grinding and polishing wheels and stones		7,003	758 Netherlands 1,495; Italy 1,112; Spain 778.
Barite and witherite		24	-- All to Belgium-Luxembourg.
Boron:			
Crude natural borates		2,020	-- Belgium-Luxembourg 1,491; Switzerland 300; Italy 168.
Oxides and acids		124	-- Germany 100; Netherlands 22.
Cement	thousand tons	1,880	369 Germany 341; Algeria 186; Cote d'Ivoire 163.
Chalk		481,645	968 Germany 148,089; Belgium-Luxembourg 123,249; Netherlands 38,984.
Clays, crude:			
Bentonite		27,802	4 Spain 9,931; Portugal 4,829; Germany 4,253.
Chamotte earth and dinas earth		114,457	-- United Kingdom 28,570; Italy 22,834; Spain 21,071.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Clays, crude--Continued:			
Fire clay	19,775	45	Italy 13,226; Germany 2,502; Spain 1,375.
Fuller's earth	2,431	--	Germany 2,243; Belgium-Luxembourg 109; Denmark 62.
Kaolin	330,616	260	Italy 123,832; Spain 63,042; Germany 42,442.
Other	210,735	9	Italy 190,311; Germany 14,224; Spain 1,665.
Cryolite and chiolite	161	--	All to Switzerland.
Diamond, natural:			
Gem, not set or strung	value, thousands \$77,458	\$13,829	Switzerland \$27,852; Belgium-Luxembourg \$18,066; Israel \$7,193.
Industrial stones	do. \$493	--	Belgium-Luxembourg \$471; Colombia \$11; Portugal \$8.
Dust and powder	do. \$380	--	Italy \$68; Iran \$44; Portugal \$19.
Diatomite and other infusorial earth	31,448	91	Germany 4,703; Italy 3,235; United Kingdom 2,916.
Feldspar	126,350	--	Spain 63,154; Germany 20,877; Belgium-Luxembourg 20,343.
Fertilizer materials:			
Crude, n.e.s.	31,409	48	Switzerland 5,096; United Kingdom 4,874; Spain 4,650.
Manufactured:			
Ammonia	57,052	--	Spain 33,254; Norway 10,198; Belgium-Luxembourg 5,317.
Nitrogenous	666,530	5,007	Spain 115,992; Netherlands 105,680; Belgium-Luxembourg 84,098.
Phosphatic	28,537	--	Spain 15,623; Italy 5,331; Belgium-Luxembourg 3,084.
Potassic	180,140	(1/)	Belgium-Luxembourg 49,078; Italy 28,970; Netherlands 26,660.
Unspecified and mixed	452,350	--	Spain 92,287; Germany 78,726; Ireland 72,785.
Fluorspar	24,343	438	Italy 8,392; Tunisia 5,782; Germany 4,626.
Graphite, natural	349	79	Germany 64; Switzerland 46; Italy 32.
Gypsum and plaster	859,361	13	Belgium-Luxembourg 520,968; Germany 176,061; Netherlands 81,034.
Iodine	44	--	United Kingdom 25; Germany 4; Italy 3.
Kyanite and related materials:			
Mullite	43	--	Czech Republic 30; Belgium-Luxembourg 9; unspecified Asia 4.
Unspecified	51,236	18	United Kingdom 25,524; Germany 11,588; Belgium-Luxembourg 3,824.
Lime	652,989	(1/)	Germany 409,392; Finland 116,730; Belgium-Luxembourg 49,749.
Magnesium compounds:			
Magnesite, crude	77	--	Belgium-Luxembourg 25; Switzerland 24; Romania 20.
Oxides and hydroxides	16,811	96	Belgium-Luxembourg 5,347; Poland 5,301; Netherlands 1,910.
Other	98	--	Switzerland 49; Algeria 40; Belgium-Luxembourg 9.
Mica:			
Crude including splittings and waste	12,108	--	Germany 7,900; United Kingdom 1,400; Italy 862.
Worked including agglomerated splittings	1,563	36	Switzerland 1,090; Germany 122; United Kingdom 112.
Nitrates, crude	65	--	Belgium-Luxembourg 48; Germany 14; Portugal 3.
Phosphates, crude	4,538	--	Belgium-Luxembourg 2,594; Spain 1,016; Germany 332.
Pigments, mineral:			
Natural, crude	2,858	100	Germany 1,102; United Kingdom 323; Singapore 255.
Iron oxides and hydroxides, processed	12,880	5	Germany 5,467; Italy 4,231; Spain 872.
Potassium salts, crude	6	--	All to Italy.
Precious and semiprecious stones other than diamond:			
Natural	value, thousands \$35,559	\$1,462	Switzerland \$24,670; Vietnam \$3,021; Italy \$1,256.
Synthetic	do. \$36,748	\$1,295	Switzerland \$15,614; Mauritius \$7,473; Hong Kong, China \$2,377.
Pyrite, unroasted	17	--	Switzerland 12; Italy 5.
Quartz crystal, piezoelectric	value, thousands \$7,647	\$116	United Kingdom \$2,676; Finland \$1,958; Sweden \$1,551.
Salt and brine	591,516	511	Italy 282,956; Germany 99,499; Belgium-Luxembourg 69,890.
Sodium sulfate, manufactured	21,344	--	Belgium-Luxembourg 12,337; Italy 5,473; United Kingdom 2,289.
Stone, sand and gravel:			
Dimension stone:			
Crude and partly worked	135,030	1,316	Belgium-Luxembourg 42,439; Germany 40,290; Switzerland 16,511.
Worked	137,526	15,323	Belgium-Luxembourg 41,437; Germany 28,697; Switzerland 12,333.
Dolomite, chiefly refractory-grade	90,831	--	Belgium-Luxembourg 64,766; Netherlands 7,323; Germany 4,535.
Gravel and crushed rock	thousand tons 9,440	7	Germany 3,324; Switzerland 2,433; Netherlands 1,480.
Limestone other than dimension	216,214	21	Germany 139,608; Norway 57,684; Belgium-Luxembourg 16,666.
Quartz and quartzite	4,402	12	Italy 3,025; Germany 614; Spain 433.
Sand other than metal-bearing	thousand tons 4,272	3	Germany 2,287; Italy 702; Switzerland 572.
Sulfur:			
Sulfuric acid	226,079	3	Belgium-Luxembourg 155,171; United Kingdom 43,420; Spain 12,772.

See footnotes at end of table.

TABLE 3--Continued
FRANCE: EXPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Destinations	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Sulfur--Continued:			
Elemental:			
Crude including native and byproduct	514,409	668	Morocco 129,148; Tunisia 112,619; United Kingdom 73,511.
Colloidal, precipitated, sublimed	694	--	Germany 315; Spain 146; Belgium-Luxembourg 116.
Talc, steatite, soapstone, pyrophyllite	216,966	6,991	Germany 53,852; Spain 38,509; Italy 29,766.
Vermiculite, perlite, chlorite	1,390	--	Nigeria 680; Portugal 229; Saudi Arabia 161.
Other:			
Crude	11,106	(1/)	Belgium-Luxembourg 8,956; Portugal 1,514; Switzerland 239.
Slag and dross, not metal-bearing:			
Granulated slag (slag sand) from iron and steel industry thousand tons	1,251	247	Cote d' Ivoire 284; Belgium-Luxembourg 281; Israel 278.
Waste, scale, dross, slag of iron or steel industry	601,365	--	Belgium-Luxembourg 291,574; Germany 144,525; United Kingdom 80,620.
Slag and ash, n.e.s., including seaweed ash (kelp)	187,255	--	Germany 128,815; Italy 19,285; Belgium-Luxembourg 17,767.
MINERAL FUELS AND RELATED MATERIALS			
Asphalt and bitumen, natural	26,416	17	Belgium-Luxembourg 23,457; Germany 1,700; Switzerland 529.
Carbon black	138,721	29	Germany 46,376; Spain 26,216; Italy 22,084.
Coal:			
Anthracite	3,033	--	Belgium-Luxembourg 2,545; Switzerland 184; Germany 162.
Bituminous	1,832	--	Germany 1,757; Belgium-Luxembourg 38; Czech Republic 23.
Briquets of anthracite and bituminous coal	14,317	--	Netherlands 6,698; Belgium-Luxembourg 2,995; Germany 2,011.
Lignite including briquets	5,933	--	Netherlands 5,010; Italy 404; Belgium-Luxembourg 302.
All grades including briquets	87,829	--	Germany 50,676; Netherlands 12,146; Italy 11,288.
Coke and semicoke	456,569	--	Belgium-Luxembourg 159,491; Germany 105,578; Italy 44,992.
Gas, natural:			
Gaseous	553,991	--	Hungary 285,426; Switzerland 220,336; Belgium-Luxembourg 44,791.
Liquefied value, thousands	\$2	--	Belgium-Luxembourg \$1; United Arab Emirates \$1.
Peat including briquets and litter	16,018	--	Italy 5,126; Belgium-Luxembourg 4,128; Germany 2,673.
Petroleum:			
Crude thousand 42-gallon barrels	2,936	--	Germany 1,394; Switzerland 886; United Kingdom 655.
Refinery products:			
Liquefied petroleum gas do.	16,922	558	Italy 3,526; Morocco 3,190; Netherlands 2,111.
Mineral jelly and wax do.	1,201	11	Germany 459; Netherlands 290; Belgium-Luxembourg 175.
Asphalt do.	3,791	--	Spain 851; Belgium-Luxembourg 497; United Kingdom 472.
Bitumen and other residues do.	3,967	--	Spain 853; Belgium-Luxembourg 512; United Kingdom 503.
Bituminous mixtures 42-gallon barrels	196,974	836	Algeria 59,867; Germany 42,850; Switzerland 30,233.
Petroleum coke do.	65,040	6,452	Belgium-Luxembourg 43,832; Canada 2,204; Sweden 1,090.
Unspecified thousand 42-gallon barrels	132,145	12,289	United Kingdom 17,503; Switzerland 15,075; Germany 13,909.

-- Zero.

1/ Less than 1/2 unit.

Source: United Nations Statistical Office (microfiche).

TABLE 4
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
METALS			
Alkali and alkaline-earth metals:			
Alkali metals	852	45	China 348; Germany 205; Belgium-Luxembourg 84.
Alkaline-earth metals	1,517	(1/)	Russia 936; China 380; Canada 98.
Aluminum:			
Ore and concentrate thousand tons	1,578	(1/)	Guinea 1,093; Greece 228; China 138.
Oxides and hydroxides	619,355	1,922	Suriname 215,700; Jamaica 190,560; Greece 68,960.
Ash and residue	13,517	--	Germany 7,247; Netherlands 2,921; Belgium-Luxembourg 2,671.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
METALS--Continued			
Aluminum--Continued:			
Metal including alloys:			
Scrap	192,112	37	Germany 62,779; Belgium-Luxembourg 34,590; Netherlands 21,503.
Unwrought	475,915	363	Norway 104,789; Netherlands 94,936; Russia 40,479.
Semimanufactures	496,514	12,580	Germany 128,366; Belgium-Luxembourg 71,860; Italy 54,790.
Antimony:			
Oxides	1,218	1	Belgium-Luxembourg 700; United Kingdom 173; Netherlands 161.
Metal including alloys, all forms	8,318	2	China 7,684; Kyrgyzstan 256; Russia 110.
Arsenic, metal including alloys, all forms	72	1	China 57; Netherlands 12; Belgium-Luxembourg 1.
Beryllium, metal including alloys, all forms	9	6	Belgium-Luxembourg 1; Germany 1; United Kingdom 1.
Bismuth, metal including alloys, all forms	300	--	Belgium-Luxembourg 160; United Kingdom 91; Peru 42.
Cadmium, metal including alloys, all forms	992	48	Belgium-Luxembourg 621; Japan 176; Germany 99.
Chromium:			
Ore and concentrate	29,036	3	South Africa 12,861; Belgium-Luxembourg 7,376; Albania 5,553.
Oxides and hydroxides	11,828	28	United Kingdom 6,952; Kazakhstan 2,059; Germany 1,892.
Metal including alloys, all forms	925	14	United Kingdom 339; Russia 308; China 80.
Cobalt:			
Ore and concentrate	1,639	16	Morocco 1,581; Belgium-Luxembourg 40; Russia 2.
Oxides and hydroxides	568	62	United Kingdom 225; Finland 166; Germany 45.
Metal including alloys, all forms	1,768	190	United Kingdom 463; Russia 311; Zambia 140.
Copper:			
Ore and concentrate	39	--	Australia 26; Italy 7; Belgium-Luxembourg 3.
Matte and speiss including cement copper	1,150	--	Belgium-Luxembourg 1,091; Hong Kong, China 30; Netherlands 16.
Oxides and hydroxides	742	262	Germany 142; Belgium-Luxembourg 122; United Kingdom 77.
Sulfate	6,471	(1)	Germany 1,424; Russia 1,321; Netherlands 845.
Ash and residue	333	--	Switzerland 284; Morocco 39; unspecified 7.
Metal including alloys:			
Scrap	100,870	688	Germany 26,779; United Kingdom 14,761; Belgium-Luxembourg 9,636.
Unwrought	605,541	7,429	Chile 247,536; Poland 61,403; Russia 61,028.
Semimanufactures	281,721	2,401	Germany 108,347; Belgium-Luxembourg 43,715; Italy 40,696.
Germanium, metal including alloys, all forms	2	(1)	Belgium-Luxembourg 2.
Gold:			
Waste and sweepings	value, thousands \$1,384	--	Mauritius \$816; Italy \$186; Germany \$93.
Metal including alloys, unwrought and par	do. \$382,804	\$27,164	United Kingdom \$226,853; Switzerland \$37,073; Italy \$23,519.
Iron and steel:			
Ore and concentrate:			
Excluding roasted pyrite	thousand tons 19,747	--	Brazil 6,889; Australia 5,059; Mauritania 3,456.
Pyrite, roasted	8,337	--	Italy 8,323; Germany 14.
Metal:			
Scrap	thousand tons 2,724	(1)	Germany 1,485; Belgium-Luxembourg 428; United Kingdom 259.
Pig iron, cast iron, related materials	255,427	329	Russia 104,865; Germany 38,152; Canada 23,004.
Ferrous alloys:			
Ferromanganese	283,292	93	South Africa 190,042; Norway 17,089; Finland 13,505.
Ferromanganese	59,532	--	Norway 31,942; South Africa 18,424; Belgium-Luxembourg 5,533.
Ferromolybdenum	4,835	--	Belgium-Luxembourg 2,194; United Kingdom 996; China 900.
Ferronickel	41,604	1	New Caledonia 20,174; Colombia 13,386; Dominican Republic 5,001.
Ferromanganese	1,983	--	Brazil 1,015; Canada 599; Germany 285.
Ferrosilicochromium	108	--	Netherlands 74; Zimbabwe 33; Russia 1.
Ferrosilicomanganese	59,924	--	Norway 17,118; Spain 13,733; Ukraine 12,740.
Ferrosilicon	60,880	43	Norway 20,319; Belgium-Luxembourg 12,296; Germany 7,552.
Ferrotitanium and ferrosilicotitanium	5,487	--	United Kingdom 3,386; Russia 1,301; Germany 384.
Ferrotungsten and ferrosilicotungsten	769	--	China 301; Russia 191; Belgium-Luxembourg 169.
Ferrovandium	1,154	--	Austria 578; Germany 313; Belgium-Luxembourg 102.
Silicon metal	19,783	1	Brazil 6,407; Norway 5,053; Germany 2,232.
Unspecified	22,357	805	Brazil 4,957; Argentina 4,248; Germany 3,536.
Steel, primary forms	thousand tons 1,404	1	Belgium-Luxembourg 506; Germany 276; Brazil 228.
Semimanufactures:			
Bars, rods, angles, shapes, sections	do. 3,140	1	Germany 829; Belgium-Luxembourg 821; Italy 593.
Rails and accessories	25,683	2	Belgium-Luxembourg 9,097; Germany 7,632; Denmark 3,312.
Wire	427,249	763	Belgium-Luxembourg 122,079; Germany 93,747; Italy 83,664.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Sources		
		United States	Other (principal)	
METALS--Continued				
Iron and steel--Continued:				
Metal--Continued:				
Semimanufactures--Continued:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	thousand tons	5,201	(1/)	Belgium-Luxembourg 2,473; Germany 936; Italy 507.
Clad, plated, coated	do.	2,155	9	Belgium-Luxembourg 978; Germany 373; Italy 201.
Of alloy steel		802,224	11,613	Belgium-Luxembourg 337,430; Germany 201,672; Italy 63,534.
Tubes, pipes, fittings	thousand tons	1,162	1	Italy 379; Germany 304; Spain 113.
Lead:				
Ore and concentrate		201,999	17,859	South Africa 53,029; Sweden 30,121; Australia 24,769.
Oxides		2,233	8	Germany 1,549; Mexico 396; United Kingdom 112.
Ash and residue		801	--	Germany 621; Belgium-Luxembourg 179.
Metal including alloys:				
Scrap		43,194	--	Belgium-Luxembourg 13,563; Germany 8,484; Netherlands 7,870.
Unwrought		50,393	5	United Kingdom 17,302; Germany 15,140; Belgium-Luxembourg 13,772.
Semimanufactures		14,224	7	Belgium-Luxembourg 6,107; Germany 5,605; Netherlands 1,304.
Lithium oxides and hydroxides		429	10	China 138; United Kingdom 76; Belgium-Luxembourg 59.
Magnesium, metal including alloys:				
Scrap		154	--	Italy 94; Germany 52; Belgium-Luxembourg 6.
Unwrought		12,112	1,641	Norway 4,255; China 2,556; Yugoslavia 898.
Semimanufactures		816	26	Switzerland 195; Germany 176; unspecified 135.
Manganese:				
Ore and concentrate	thousand tons	1,204	--	Gabon 741; Brazil 286; South Africa 153.
Oxides		7,844	170	Belgium-Luxembourg 2,146; Brazil 1,630; South Africa 1,228.
Metal including alloys, all forms		8,251	688	Netherlands 2,285; South Africa 1,534; Belgium-Luxembourg 1,442.
Mercury		37	(1/)	Austria 9; Belgium-Luxembourg 9; Netherlands 7.
Molybdenum:				
Ore and concentrate:				
Roasted		2,339	109	Belgium-Luxembourg 853; Chile 781; Netherlands 324.
Unroasted		17	1	Chile 15.
Oxides and hydroxides		57	2	Netherlands 37; Belgium-Luxembourg 7; Germany 6.
Metal including alloys:				
Unwrought		40	22	Belgium-Luxembourg 11; Germany 6; Russia 1.
Semimanufactures		4,078	172	Belgium-Luxembourg 3,407; Germany 155; Russia 143.
Nickel:				
Ore and concentrate		489	10	New Caledonia 319; Belgium-Luxembourg 139.
Matte and speiss		16,699	(1/)	New Caledonia 16,166; Russia 97; Germany 76.
Oxides and hydroxides		538	(1/)	Netherlands 308; Finland 87; Japan 69.
Metal including alloys:				
Scrap		2,199	536	Germany 510; Russia 331; Netherlands 231.
Unwrought		45,879	1,517	Russia 16,605; Australia 6,456; Germany 5,148.
Semimanufactures		10,034	3,333	United Kingdom 2,498; Germany 2,480; Belgium-Luxembourg 529.
Platinum-group metals:				
Waste and sweepings	value, thousands	\$10,310	--	Bulgaria \$4,590; Algeria \$1,674; Tunisia \$1,353.
Metal including alloys, unwrought and partly wrought:				
Palladium	do.	\$138,571	\$6,149	United Kingdom \$59,729; Ireland \$38,317; Switzerland \$12,573.
Platinum	do.	\$130,948	\$4,502	United Kingdom \$62,466; Ireland \$21,429; South Africa \$19,574.
Rhodium	do.	\$40,852	\$3,710	United Kingdom \$17,476; Ireland \$7,413; South Africa \$4,381.
Iridium, osmium, ruthenium	do.	\$2,227	\$801	United Kingdom \$843; Germany \$273; Italy \$181.
Rare-earth, metals including alloys, all forms		431	16	Belgium-Luxembourg 224; China 92; Japan 45.
Selenium, elemental		82	1	Belgium-Luxembourg 27; Japan 19; Finland 11.
Silicon, high-purity		554	192	Japan 70; Norway 69; Netherlands 68.
Silver:				
Ore and concentrate	value, thousands	\$2	--	Germany \$1; United Kingdom \$1.
Metal including alloys, unwrought and part	do.	\$235,697	\$3,233	Switzerland \$56,154; United Kingdom \$39,419; Netherlands \$26,883.
Tantalum, metal including alloys, all forms		27	5	Germany 16; Belgium-Luxembourg 2; Austria 1.
Tin:				
Ore and concentrate		1,008	--	Indonesia 826; United Kingdom 174; Belgium-Luxembourg 9.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
METALS--Continued			
Tin--Continued:			
Metal including alloys:			
Scrap	1,958	(1/)	Belgium-Luxembourg 456; China 250; unspecified 1,047.
Unwrought	9,411	38	Indonesia 3,494; China 1,028; Brazil 776.
Semimanufactures	1,036	7	Germany 384; United Kingdom 363; Netherlands 99.
Titanium:			
Ore and concentrate	222,702	1	Canada 119,581; Australia 93,497; Norway 3,863.
Oxides	10,497	349	China 1,898; Slovenia 1,386; Belgium-Luxembourg 1,280.
Metal including alloys, all forms	7,473	1,960	United Kingdom 2,662; Japan 1,370; Russia 469.
Tungsten:			
Ore and concentrate	12	(1/)	Ireland 11; Germany 1.
Metal including alloys:			
Unwrought	455	10	China 157; Belgium-Luxembourg 95; Germany 88.
Semimanufactures	131	23	Belgium-Luxembourg 66; Germany 14; Austria 9.
Uranium and thorium:			
Ore and concentrate	value, thousands	\$23	-- Spain \$20; Germany \$3.
Oxides and other compounds	do.	\$162,390	\$5,619 Niger \$151,375; Russia \$130,470; Netherlands \$16,184.
Metal including all forms:			
Uranium	do.	\$416,044	\$3,771 Russia \$148,712; Canada \$38,140.
Thorium	do.	\$1,081	\$10 Sweden \$595; Belgium-Luxembourg \$328; Spain \$66.
Vanadium:			
Oxides and hydroxides	476	94	China 74; United Kingdom 54; Austria 27.
Metal including alloys, all forms	114	72	United Kingdom 34; Italy 6; Belgium-Luxembourg 3.
Zinc:			
Ore and concentrate	563,460	--	Belgium-Luxembourg 316,431; Peru 77,366; Bolivia 75,159.
Oxides	16,607	110	Germany 3,529; Netherlands 3,393; Italy 3,093.
Blue powder	8,510	--	Belgium-Luxembourg 7,064; Germany 1,104; United Kingdom 147.
Ash and residue	56,492	3,514	Germany 18,263; Belgium-Luxembourg 14,243; Spain 12,689.
Metal including alloys:			
Scrap	12,980	--	Belgium-Luxembourg 6,839; Germany 3,118; Netherlands 1,198.
Unwrought	163,476	10	Belgium-Luxembourg 45,894; Netherlands 41,986; Germany 22,378.
Semimanufactures	25,458	9	Germany 14,621; Belgium-Luxembourg 3,633; Peru 2,111.
Zirconium:			
Ore and concentrate	54,164	873	Australia 26,660; South Africa 24,410; Netherlands 866.
Metal including alloys, semimanufactures	156	127	Germany 10; Belgium-Luxembourg 9; Japan 5.
Other:			
Oxides and hydroxides	4,479	20	Spain 1,797; Belgium-Luxembourg 1,558; Germany 430.
Ashes and residues	5,499	--	Belgium-Luxembourg 3,704; Switzerland 735; Netherlands 441.
Base metals including alloys, all forms	268	8	Germany 171; Belgium-Luxembourg 33; Switzerland 25.
Metalloids	79	1	Germany 63; Belgium-Luxembourg 8; United Kingdom 5.
Precious metals, n.e.s.:			
Ores and concentrates	kilograms	384,600	-- Netherlands 293,000; Italy 31,600; Belgium-Luxembourg 30,000.
Waste and scrap	value, thousands	\$18,061	\$71 United Kingdom \$7,596; Netherlands \$2,512; Switzerland \$2,320.
INDUSTRIAL MINERALS			
Abrasives, n.e.s.:			
Natural, corundum, emery, pumice, etc.	9,524	387	Belgium-Luxembourg 2,984; Germany 1,440; Italy 1,249.
Artificial:			
Corundum	18,307	86	Italy 5,123; Germany 4,450; Belgium-Luxembourg 3,481.
Silicon carbide	37,972	30	Germany 10,855; Netherlands 5,038; Norway 4,129.
Dust and powder of precious and semiprecious stones including diamonds	\$7,775	\$2,255	Ireland \$3,195; Belgium-Luxembourg \$742; Germany \$711.
	value, thousands		
Grinding and polishing wheels and stones	15,452	155	Italy 4,059; Germany 3,597; Belgium-Luxembourg 1,495.
Asbestos, crude	979	--	Netherlands 859; Zimbabwe 56; Italy 24.
Barite and witherite	25,273	--	China 10,817; Netherlands 4,806; Germany 3,883.
Boron:			
Crude natural borates	11,111	9	Turkey 6,551; Argentina 3,220; Spain 510.
Oxides and acids	29,163	11,022	Italy 14,670; Turkey 1,854; Germany 648.
Cement	thousand tons	2,290	(1/)
Chalk	54,524	--	Germany 20,283; Belgium-Luxembourg 11,154; Austria 10,517.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Clays, crude:			
Bentonite	160,789	3,181	Greece 68,356; Italy 41,194; Turkey 15,184.
Chamotte earth and dinas earth	32,718	2,328	Germany 23,268; Ukraine 3,003; Czech Republic 1,463.
Fire clay	18,703	5	Germany 16,707; China 1,634; Belgium-Luxembourg 220.
Fuller's earth	2,174	601	Denmark 862; Netherlands 361; Spain 175.
Kaolin	368,970	81,218	United Kingdom 166,188; Brazil 43,938; Belgium-Luxembourg 23,516.
Other	369,477	2,711	Germany 282,615; Senegal 38,331; Israel 13,999.
Cryolite and chiolite	14	--	Germany 12; Italy 1; United Kingdom 1.
Diamond, natural:			
Gem, not set or strung	value, thousands \$274,610	\$22,410	Belgium-Luxembourg \$95,911; Switzerland \$70,556; India \$22,190.
Industrial stones	do. \$6,501	\$5	Belgium-Luxembourg \$5,463; Netherlands \$256; Switzerland \$248.
Dust and powder	do. \$7,575	\$2,090	Ireland \$3,195; Belgium-Luxembourg \$742; Germany \$706.
Diatomite and other infusorial earth	18,092	3,448	Denmark 5,829; Germany 5,653; Spain 1,629.
Feldspar	47,367	9	Germany 34,177; Italy 8,460; Norway 2,461.
Fertilizer materials:			
Crude, n.e.s.	143,940	27	Belgium-Luxembourg 80,587; Netherlands 20,302; Italy 19,728.
Manufactured:			
Ammonia	604,363	60	Germany 183,392; Belgium-Luxembourg 79,699; Netherlands 64,377.
Nitrogenous	thousand tons 3,883	6	Netherlands 851; Belgium-Luxembourg 843; Lithuania 522.
Phosphatic	733,093	--	Tunisia 160,397; Belgium-Luxembourg 148,524; Morocco 125,205.
Potassic	thousand tons 2,149	17	Germany 790; Spain 493; United Kingdom 343.
Unspecified and mixed	do. 1,929	11	Belgium-Luxembourg 597; Netherlands 301; Germany 235.
Fluorspar	5,902	1	Mexico 4,017; Spain 1,091; Belgium-Luxembourg 582.
Graphite, natural	17,034	33	Spain 12,828; Germany 2,029; Madagascar 506.
Gypsum and plaster	281,365	1,107	Germany 158,036; Spain 57,384; Belgium-Luxembourg 26,907.
Iodine	1,839	1	Chile 686; Japan 649; Belgium-Luxembourg 345.
Kyanite and related materials:			
Mullite	2,080	720	Germany 669; United Kingdom 417; Belgium-Luxembourg 271.
Unspecified	1,014	756	Germany 139; Netherlands 77; South Africa 20.
Lime	375,084	80	Germany 120,202; Belgium-Luxembourg 113,239; Spain 91,940.
Magnesium compounds:			
Magnesite, crude	9,615	--	Spain 8,940; Italy 440; Germany 146.
Oxides and hydroxides	199,842	1,445	Spain 37,335; Greece 30,356; Belgium-Luxembourg 27,097.
Other	161,081	--	Germany 143,938; Belgium-Luxembourg 13,986; Italy 2,456.
Mica:			
Crude including splittings and waste	3,189	233	India 979; Brazil 896; Madagascar 292.
Worked including agglomerated splittings	408	6	Belgium-Luxembourg 137; Switzerland 114; Germany 62.
Nitrates, crude	12,152	--	Belgium-Luxembourg 8,507; Germany 2,351; Netherlands 445.
Phosphates, crude	thousand tons 1,471	(1)	Morocco 921; Syria 229; Algeria 219.
Phosphorus, elemental	65	(1)	China 50; Germany 7; India 4.
Pigments, mineral:			
Natural, crude	5,221	--	Morocco 3,326; Italy 1,081; Germany 741.
Iron oxides and hydroxides, processed	37,550	423	Germany 13,471; Belgium-Luxembourg 8,366; China 4,704.
Potassium salts, crude	1,046	--	Germany 941; Belgium-Luxembourg 99; United Kingdom 6.
Precious and semiprecious stones other than diamond:			
Natural	value, thousands \$76,029	\$4,068	Switzerland \$29,862; Thailand \$13,785; Belgium-Luxembourg \$6,165.
Synthetic	do. \$21,222	\$1,995	Mauritius \$9,809; Switzerland \$4,399; Czech Republic \$1,065.
Pyrite, unroasted	2,474	140	Italy 707; Spain 164; unspecified 1,408.
Quartz crystal, piezoelectric	value, thousands \$2,728	\$83	Russia \$1,437; Belgium-Luxembourg \$480; United Kingdom \$253.
Salt and brine	559,474	136	Spain 166,734; Netherlands 151,350; Germany 68,985.
Sodium compounds, n.e.s.:			
Soda ash, manufactured	296,667	114,770	Poland 79,600; Germany 37,994; Netherlands 35,882.
Sulfate, manufactured	79,691	--	Spain 51,736; Belgium-Luxembourg 23,282; Austria 1,516.
Stone, sand, and gravel:			
Dimension stone:			
Crude and partly worked	334,306	138	Belgium-Luxembourg 46,925; Brazil 46,021; South Africa 44,619.
Worked	468,944	375	Spain 238,634; Italy 66,298; Germany 63,338.
Dolomite, chiefly refractory-grade	352,987	10	Belgium-Luxembourg 281,711; Italy 34,208; Spain 25,261.
Gravel and crushed rock	thousand tons 6,698	(1)	Belgium-Luxembourg 4,496; Germany 641; United Kingdom 601.
Limestone other than dimension	145,817	--	Belgium-Luxembourg 145,398; Germany 293; Denmark 78.

See footnotes at end of table.

TABLE 4--Continued
FRANCE: IMPORTS OF MINERAL COMMODITIES IN 1998

(Metric tons unless otherwise specified)

Commodity	Total	Sources	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Stone, sand, and gravel--Continued:			
Quartz and quartzite	300,524	553	Belgium-Luxembourg 185,772; Italy 27,879; unspecified 58,408.
Sand other than metal-bearing thousand tons	1,884	60	Belgium-Luxembourg 1,060; United Kingdom 508; Germany 102.
Sulfur:			
Elemental:			
Crude including native and byproduct	134,301	7	Poland 76,273; Germany 21,955; Netherlands 19,164.
Colloidal, precipitated, sublimed	11,152	1	Germany 8,467; Spain 1,914; Portugal 192.
Dioxide	3,527	5	Italy 1,812; Sweden 1,399; Germany 281.
Sulfuric acid	491,104	249	Netherlands 35,364; Germany 31,293; Italy 20,368.
Talc, steatite, soapstone, pyrophyllite	49,837	757	United Kingdom 12,787; Belgium-Luxembourg 11,697; Finland 6,911.
Vermiculite, perlite, chlorite	92,989	54	Greece 22,902; Turkey 20,218; Italy 19,213.
Other:			
Crude thousand tons	2,027	2	Switzerland 1,295; Spain 217; Norway 205.
Slag and dross, not metal-bearing:			
Granulated slag (slag sand) from iron and steel industry	810,363	--	Germany 467,204; Belgium-Luxembourg 342,690; Netherlands 470.
Waste, scale, dross, slag of iron or steel industry	647,665	--	Germany 462,688; Canada 131,981; Belgium-Luxembourg 50,056.
Slag and ash, n.e.s., including seaweed ash (kelp)	179,201	2,250	Germany 118,351; Belgium-Luxembourg 49,118; Spain 5,412.
MINERAL FUELS AND RELATED MATERIALS			
Asphalt and bitumen, natural	46,780	357	Germany 26,729; Belgium-Luxembourg 13,720; Spain 3,690.
Carbon black	144,830	7,318	Netherlands 35,364; Germany 31,293; Italy 20,368.
Coal:			
Anthracite thousand tons	1,656	103	China 563; Venezuela 284; United Kingdom 101.
Bituminous do.	12,173	3,397	Australia 2,541; Poland 1,374; Colombia 1,233.
Briquets of anthracite and bituminous coal	94,314	254	Germany 60,780; United Kingdom 22,603; Belgium-Luxembourg 10,562.
Lignite including briquets	49,205	--	Germany 48,149; Belgium-Luxembourg 1,051; Netherlands 5.
All grades including briquets thousand tons	14,103	3,502	South Africa 2,716; Australia 2,586; Poland 1,443.
Coke and semicoke do.	2,072	135	China 977; Australia 253; Colombia 205.
Gas, manufactured value, thousands	\$393	\$64	Germany \$272; United Kingdom \$25; Austria \$16.
Gas, natural:			
Gaseous thousand tons	20,065	--	Norway 8,154; Russia 7,436; Netherlands 4,475.
Liquefied do.	6,961	--	Mainly from Algeria.
Peat including briquets and litter	571,161	--	Germany 256,930; Netherlands 91,787; Belgium-Luxembourg 81,775.
Petroleum:			
Crude thousand 42-gallon barrels	682,559	--	Saudi Arabia 138,617; Norway 127,976; United Kingdom 94,022.
Refinery products:			
Liquefied petroleum gas do.	17,071	124	United Kingdom 5,742; Norway 2,250; Saudi Arabia 1,659.
Mineral jelly and wax do.	1,191	246	Netherlands 181; Germany 168; United Kingdom 158.
Asphalt do.	2,706	--	Belgium-Luxembourg 968; Spain 798; Germany 461.
Bitumen and other residues do.	3,464	281	Belgium-Luxembourg 1,019; Spain 798; Germany 610.
Bituminous mixtures 42-gallon barrels	112,219	1,848	Belgium-Luxembourg 62,891; Germany 19,974; Spain 9,266.
Petroleum coke thousand 42-gallon barrels	6,128	3,867	Belgium-Luxembourg 568; United Kingdom 463; Venezuela 292.
Unspecified do.	158,677	838	Russia 20,848; United Kingdom 20,261; Netherlands 15,799.

-- Zero.

1/ Less than 1/2 unit.

Source: United Nations Statistical Office (microfiche).

TABLE 5
FRANCE: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of facilities	Annual capacity
Alumina	Aluminium P�chiney	Plant at Gardanne, Bouches-du-Rhone Province	700
Aluminum	do.	Aluminum smelters at:	
		Saint-Jean-de-Maurienne, Savoie Province	120
Do.	do.	Nogu�res, Pyr�n�es, Atlantiques Province	115
Do.	do.	Lannemezan, Hautes-Pyr�n�es Province	63
Do.	do.	Auzat, Ari�ege Province	44

TABLE 5--Continued
FRANCE: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of facilities	Annual capacity
Andalusite		Denain-Anzin Minéraux Refractaire Ceramique	Glomel Mine, Brittany	75
Antimony, metal		Société Nouvelle des Mines de la Lucette	Plant at Le Genest, Mayeene Province	10
Barite		Barytine de Chaillac	Mine and plant at Chaillac, Indre Province	150
Do.		Société Industrielle du Centre	Mine at Rossigno, Indre Province	100
Bauxite		Aluminium Pechiney	Mines in Var Province (closed - maintenance status)	900
Do.		Société Anonyme des Bauxites et Alumines de Province	do.	400
Cadmium	tons	Compagnie Royal Asturienne des Mines	Plant at D'Auby-les-Douai, Nord Province	200
Cement		Eight companies, of which the largest are:	80 plants, including--	23,233
Do.		Cement La Farge France	15 plants;	7,815
Do.			Largest at St. Pierre-la-Cour	(1,160)
Do.		Société des Ciments Français	13 plants;	6,190
Do.			Largest at Gargenville	(1,100)
Coal		Charbonnages de France (CdF) including:		13,000
Do.		Bassin de Centre-Midi	Mines and washeries in middle France	(2,500)
Do.		Bassin de Nord-Pas-de-Calais	Mines and washeries in northern France (closed)	(1,000)
Do.		Bassin de Lorraine	Mines and washeries in eastern France	(9,500)
Cobalt, metal	tons	Société Métallurgique Le Nickel (SLN)	Plant at Sandouville, near Le Havre	600
Copper, metal		Compagnie General d'Electrolyse du Palais	Electrolytic plant at Palais-sur-Vienne	45
Do.		Société Française d'Affinage du Cuivre	Smelter at Poissy	11
Do.		Affinerie Sud-Ouest	Refinery at Toulouse	2
Feldspar		Denain-Anzin Minéraux S.A.	Mine and plant at St. Chély d'Apcher	55
Ferroalloys		Société du Ferromanganese de Paris, Outreau	Plant at Boulogne-sur-Mer	420
Do.		Pechiney Electrometallurgie	Plants at Bellegarde	387
Do.		Chromeurope S.A.	Plant at Dunkerque	25
Fluorspar		Société Générale de Recherches et d'Exploitation Minière (SOGEREM)	Mines at Le Burc, Montroc le Moulina, and Trebas	150
Gold	kilograms	Société des Mines du Bourneix (Government)	Mines in the Saint Yrieix la Perche District, Limoges	4,000
Do.	do.	Mines d'Or de Salsigne (Eltin Co., 51%; Ranger Co., 18%; Peter Hambro Plc., 10%)	Mine near Carcassonne	3,000
Gypsum		S.A. de Materiel de Construction	Mine at Taverny	1,500
Iron and steel:				
Iron ore		Acieries Reunies de Burbach-Eich-Dudelang (ARBED)	Mine at Terres Rouges, Bassin de Lorraine, eastern France (closed 1999)	8,000
Steel		Usinor-Sacilor	Dunkerque	7,500
Do.		do.	Fos-sur-Mer	4,200
Do.		do.	Seramange	3,000
Do.		Sollac, Unimetal (Usinor-Sacilor, 100%)	Gadrange, Neuves Maisons, Thonville, Trith-St-Leper	8,400
Kaolin		La Source Compagnie Minière	Kaolin d'Arvor Mine, Quessoy	300
Lead, metal		Métaleurop Nord S.A.	Imperial smelter, Noyelles Godault	110
Magnesium, metal		Société Française d'Electro-Metallurgique	Plant at Marignac, Haute Garonne	14
Natural gas	million cubic meters	Société Nationale Elf Aquitaine (SNEA)	Gasfield and plant at Lacq	20,000
Nickel, metal		Société Metallurgia le Nickel (SLN)	Plant at Sandouville	16
Petroleum:				
Crude	barrels per day	Société Nationale Elf Aquitaine (SNEA)	Paris Basin oilfields	1,000
Refined	do.	Compagnie Française de Raffinage (TotalFina)	Refineries at Gonfreville and La Mede	446,000
Do.		Shell-Française	Refinery at Petite Couron	285,000
Do.		do.	Refinery at Berre	270,000
Do.		Elf Aquitaine-France	Refinery at Feyzin	120,000
Do.		do.	Refinery at Donges	200,000
Do.		do.	Refinery at Grandpuits	96,000
Do.		Société Française British Petroleum (S.F.B.P.)	Refineries at Lavera	175,000
Do.		Esso S.A.	Refineries at Fos-sur-Mer	237,000
Do.		Mobil Oil Française	Refineries at Gravenchon	62,000
Do.		Cie. Rhenane de Raffinage (CRR)	Refinery at Reichstett	80,000
Potash, K ₂ O		Mines de Potasse d'Alsace S.A. (MDPA)	Mines at Amélie, Marie-Louise, and Theodore, in Alsace	10,000
Salt, rock		Compagnie des Salins du Midi et des Salines de l'Est	Varangeville Mine at Saint-Nicolas-de-Port	9,000
Sulfur		Société Nationale Elf Aquitaine (SNEA)	Byproduct from natural gas desulfurization, Lacq plant	3,000
Talc		Talc de Luzenac S.A. (Rio Tinto Corp, 100%)	Trimons Mine near Ariège, Pyrenees	350,000
Uranium, U ₃ O ₈	tons	Compagnie Général des Matériaux Nucleaires (COGEMA) (Government)	Mines at Limousin, Vendee, and Hérault	1,800
Zinc, metal		Société des Mines et Fonderies de Zinc de la Vieille Montagne (VM)	Electrolytic plant, Auby-les-Douai	210